



SEQUENCE LISTING

<110> AstaCarotene AB

<120> DNA construct and its use

<130> 29295-AstaCarotene

<140>

<141>

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<170> PatentIn Ver. 2.1

<210> 1

<211> 2543

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: napin promoter
+ chloroplast localization signal + beta-carotene C-4 oxygenase
coding sequence + termination sequence

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<221> promoter

<222> (1)..(1145)

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<221> transit peptide

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<221> CDS

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<221> terminator

<222> (2273)..(2536)

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[illegible]

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 agg cac agg cag ctc aat gat ctc ctt ggc aac atc tgc ata tca ctg 1722
 Arg His Arg Gln Leu Asn Asp Leu Leu Gly Asn Ile Cys Ile Ser Leu
 170 175 180
 tac gcc tgg ttt gac tac agc atg ctg cat cgc aag cac tgg gag cac 1770
 Tyr Ala Trp Phe Asp Tyr Ser Met Leu His Arg Lys His Trp Glu His
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 His Asn His Thr Gly Glu Val Gly Lys Asp Pro Asp Phe His Lys Gly
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 Asn Pro Gly Leu Val Pro Trp Phe Ala Ser Phe Met Ser Ser Tyr Met
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 Ser Leu Trp Gln Phe Ala Arg Leu Ala Trp Trp Ala Val Val Met Gln
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 atg ctg ggg gcg ccc atg gca aat ctc cta gtc ttc atg gct gca gcc 1962
 Met Leu Gly Ala Pro Met Ala Asn Leu Leu Val Phe Met Ala Ala Ala
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 Phe Arg Ala Lys Thr Ser Glu Ala Ser Asp Val Met Ser Phe Leu Thr
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 Cys Tyr His Phe Asp Leu His Trp Glu His His Arg Trp Pro Phe Ala
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<213> Artificial Sequence

<223> Description of Artificial Sequence: deduced fusion protein of
transit peptide + peptide with beta-carotene C-4 oxygenase activity

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35 40 45Asn Gly Gly Arg Val Asn Cys Met Ser Arg Met Pro Ser Glu Ser Ser
50 55 60Asp Ala Ala Arg Pro Ala Leu Lys His Ala Tyr Lys Pro Pro Ala Ser
65 70 75 80Asp Ala Lys Gly Ile Thr Met Ala Leu Thr Ile Ile Gly Thr Trp Thr
85 90 95Ala Val Phe Leu His Ala Ile Phe Gln Ile Arg Leu Pro Thr Ser Met
100 105 110Asp Gln Leu His Trp Leu Pro Val Ser Glu Ala Thr Ala Gln Leu Leu
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130 135 140Glu Phe Leu Tyr Thr Gly Leu Phe Ile Thr Thr His Asp Ala Met His
145 150 155 160Gly Thr Ile Ala Leu Arg His Arg Gln Leu Asn Asp Leu Leu Gly Asn
165 170 175Ile Cys Ile Ser Leu Tyr Ala Trp Phe Asp Tyr Ser Met Leu His Arg
180 185 190Lys His Trp Glu His His Asn His Thr Gly Glu Val Gly Lys Asp Pro
195 200 205Asp Phe His Lys Gly Asn Pro Gly Leu Val Pro Trp Phe Ala Ser Phe
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225 230 235 240Ala Val Val Met Gln Met Leu Gly Ala Pro Met Ala Asn Leu Leu Val
245 250 255

Phe Met Ala Ala Ala Pro Ile Leu Ser Ala Phe Arg Leu Phe Tyr Phe
260 265 270

Gly Thr Tyr Leu Pro His Lys Pro Glu Pro Gly Pro Ala Ala Gly Ser
275 280 285

Gln Val Met Ala Trp Phe Arg Ala Lys Thr Ser Glu Ala Ser Asp Val
290 295 300

Met Ser Phe Leu Thr Cys Tyr His Phe Asp Leu His Trp Glu His His
305 310 315 320

Arg Trp Pro Phe Ala Pro Trp Trp Gln Leu Pro His Cys Arg Arg Leu
325 330 335

Ser Gly Arg Gly Leu Val Pro Ala Leu Ala
340 345